TROPICAL RAINFALL MEASURING MISSION

September 13, 1999 - September 19, 1999
DOY 256 - 262
Day of Mission 655 - 661

TRMM MISSION OPERATIONS

- TRMM is flying in the +X Forward direction as of 99-245, at 21:30:58z.
- The next Yaw maneuver is scheduled for September 27th (99-270).
- Delta-V maneuver #123 is scheduled for September 20th (99-263) using the LBS thrusters.
- The Beta angle range for 99-263 to 269 is 31.57° to 3.27°.

TRMM SUBSYSTEM OPERATIONS

Attitude Control System (ACS)

Delta-V maneuver #122 was successfully conducted on 99-258 at 15:16:20z and 16:02:07z, for durations of 43.0 and 29.5 seconds respectively, using the LBS thrusters. The off-modulation of the -Yaw thruster (#1) for burn 1 was 8.4% (91.6% on time). The off-modulation of the +Pitch thruster (#2) for burn 1 and 2 was 23.8% and 24.1% respectively (76.2% and 75.9% on time). The remaining fuel is 692.146 kg, and the final apogee and perigee height is 354.72 km x 347.72 km.

The ESA experienced Sun interference in quadrants 1 and 3 on 99-255 through 99-262. Moon interference was experienced in quadrants 2 and 4 during 99-261 through 99-262. The ACS performed nominally during the transitions between 3 and 4 head control.

Flight Data System (FDS)/Command & Data Handling (C&DH)

The frequency standard continues to drift in the negative direction. The frequency standard offset is currently set to x'76F' with a current drift rate of -1.34 µs/hr. The current UTCF value is 31535996.859820 sec with a current drift value of -547 µs.

The flywheel dwell value incremented to x'10F' on 99-257 at 17:28:26z.

Q-Channel restarts occurred on 99-256 at 06:25:42z, and 22:17:04z, 99-258 at 09:48:56z, and 99-262 at 00:59:00z.

Two EDAC multi-bit errors occurred at the same time on 99-262 at 11:21:27z.

Reaction Control Subsystem (RCS)

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

Power Subsystem

The Power subsystem is operating nominally.

Electrical Subsystem

The Electrical subsystem operated nominally during this period.

Thermal Subsystem

The Thermal subsystem operated nominally during this period.

Deployables Subsystem

The Deployables subsystem performed nominally during this period.

RF/Communications Subsystem

The RF/Communications subsystem performed nominally during this period.

SPACECRAFT INSTRUMENTS

CERES

CERES personnel are developing a plan for operating the instrument with the +15 V DAA anomaly. The CCR which involves creating and testing TSMs to monitor the CERES current is expected to be closed out by the end of October.

LIS

LIS performed nominally during this time period. In order to reduce packet sequence errors, a realtime command request from MSFC to reset and reconfigure the LIS instrument was performed on 99-260.

PR

PR performed nominally during this time period. The list of Internal Calibration times in which PR was not radiating is listed below:

1999/256:08:46:44 - 08:48:53z
1999/257:01:05:03 - 01:06:58z
1999/257:07:35:12 - 07:37:26z
1999/258:07:57:38 - 07:59:34z
1999/259:06:46:11 - 06:48:24z
1999/259:23:05:02 - 23:08:58z
1999/260:07:09:05 - 07:11:11z
1999/261:05:57:45 - 05:59:56z

1999/261:22:15:40 - 22:20:44z
1999/262:06:21:09 - 06:22:31z

TMI

TMI performed nominally during this time period.

VIRS

VIRS performed nominally during this time period.

GROUND SYSTEM

All Y2K rollover testing has been completed on string 3, and system cleanup has begun. String 3 operational readiness testing will begin after the cleanup and it is expected to last for approximately 1-2 weeks. String 2 remains the prime Mission Planning string.

The new FORMATS R8B5V1 testing is complete, and will be installed on String 2 later next week.

A second release command was required to complete data management for the 99-257/07:35z and 99-257/01:09:00z: events (Event #127 & #128), because the release command was sent before retransmission was completed. No data was lost.

On 99-259 at 20:00:00z, a playback Event message indicated that the TRMM EPV had failed position continuity check (Event #129). Additional EPVs were generated, uplinked and started at 99-259/22:00:00 and 99-260/00:00:00z but they all failed. Each vector came from the same file. Later trending of the data from the first failure revealed the continuity failure was in the X-axis position, 56 km difference between the two (50 km is the continuity threshold). FDF confirmed that the EPVs were bad because the post burn EPV was bad. The old one was slightly off following the previous Delta-V maneuver. At 99-260/03:06:00z, ACS System Table 85 was uplinked, through command Request #231, to widen the position limits since the continuity was approximately 6 km over the threshold. Another EPV was generated from a new and more accurate file sent by FDF. It executed successfully at 99-260/04:00:00z. EEPROM TABLE #85 was copied back to RAM at 99-260/04:17:31z.

Event Reports

#127: DS Released before REXMIT on VR4
#128: DS Rexmit interruption of release.
#129: Day 259 TRMM EPV Continuity Failure

Generic Late Acquisition Reports (for TTRs 19639)

No generic late acquisitions occurred during this period.

New Anomaly

No new Anomaly reports have been opened during this period.

Recurring Open Anomalies

No open anomalies recurred during this period.

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